

REMARKS:

The foregoing amendments amended claims 7, 8, and 10 to better correspond to the discussions in the present specification. These amended limitations are discussed in more detail below. These amendments were made to clarify what was already implied in applicant's claims and these amendments are not narrowing amendments and were not made for reasons substantially related to patentability presented. Claims 4-10 are present in the application for consideration by the examiner. Applicant respectfully requests reconsideration and allowance of these claims for at least the following reasons.

Applicant (Hiroyasu SATO) desires to express thanks to Examiner Cephia D. Toomer for the courtesies extended the undersigned in a telephone interview on October 17, 2007. During the interview, the rejection of applicant's claims 4-10 under 35 U.S.C. §112, first paragraph, which was set forth in the Official action mail July 13, 2007, was discussed. Also discussed were possible amendments to the claims for removing this rejection. In the telephone interview, the examiner agreed that applicant's specification disclosure appears to provide an adequate written description of the limitations and/or proposed amended limitations in the claims within the meaning of 35 U.S.C. §112, first paragraph. However, the examiner stated that the limitations and/or proposed amended limitations in the claims will require further consideration.

The Official action mailed on July 13, 2007, included a single rejection of claims 4-10 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Official action stated that applicant's specification does not provide support for the language added to claim 4, steps (e) and (f); claim 7, steps (a), (b), and (d); claim 8, steps (d), (e), and (f); and apparently all the steps of claim 10. Applicant respectfully traverses these

positions. However, in the foregoing amendments, the limitations in claim 7, step (d); claim 8, step (d); and claim 10 were amended to better correspond to the written descriptions in the present specification disclosure. Applicant respectfully submits that the present specification disclosure provides a written description of the limitations set forth in claim 4, steps (e) and (f); claim 7, steps (a), (b), and (d); claim 8, steps (d), (e), and (f); and claim 10 within the meaning of 35 U.S.C. §112, first paragraph, for at least the following reasons.

The test for an adequate written description is whether the description allows persons of ordinary skill in the art to recognize that the inventor invented what is claimed. M.P.E.P. §2163.02. To comply with the written description requirement of 35 U.S.C. §112, first paragraph, all that is required is that the application reasonably conveys to persons skilled in the art that, as of the filing date thereof, the inventor had possession of the subject matter later claimed by him. *In re Lukach*, 169 USPQ 795 (CCPA 1971); *In re Edwards*, 196 USPQ 465 (CCPA 1975). The test for determining whether the disclosure complies with the description of the invention requirement is whether it would have reasonably conveyed to one of ordinary skill in the art that the inventor invented the later-claimed subject matter. *In re Kaslow*, 217 USPQ 1089, 1096 (Fed. Cir. 1983). The invention claimed does not have to be described *ipsis verbis* (in the identical words) in order to satisfy the description requirement the first paragraph of Section 112. *Martin v. Johnson*, 172 USPQ 391, 395 (CCPA 1972); *Case v. CPC International, Inc.*, 221 USPQ 196, 201 (Fed. Cir.), *cert. denied*, 224 USPQ 736 (1984).

The presently claimed inventions are directed to preparing an emulsion of water and fuel. Those skilled in the art understand that water and fuel oil are immiscible (unblendable). The

presently claimed inventions are directed to providing an emulsion of water and fuel where the water and fuel are uniformly distributed.

Claim 4, step (e)

Written support for the limitation in claim 4, step (e) of "separating the mixture solution in the mixing tank and forming a water rich portion of the mixture solution at a bottom portion of a mixing tank" can be found in the present specification disclosure at page 16, lines 10-15, "(e)" and elsewhere. For example, the discussion at page 16, lines 10-15 of the present specification disclosure corresponds to FIGS. 1 and 2 of the present application and describes what occurs between timelines C and D as shown in these figures. Namely, after the combined water charging step and fine processing step that occurs between B and C in FIG. 1, in step "(e)" that is discussed at page 16, lines 10-15 of the present specification, a separating step is performed, as shown between timelines C and D in FIG. 1 of the present application.

At this time (i.e., between C and D in FIG. 1), the mixing tank 2 contains an incomplete emulsion containing molecule clusters having more oil than water (i.e., oil-rich state) and molecule clusters having more water than oil (i.e., water-rich state). After the water charging step, fine processing step, and/or agitating step is stopped; the molecule clusters, which include those having more oil than water (i.e., oil-rich state) and those having more water than oil (i.e., water-rich state), settle. Since the molecule clusters having more water than oil (i.e., water-rich state) are heavier or have a larger specific gravity than the molecule clusters having more oil than water (i.e., oil-rich state), the molecule clusters having more water than oil settle to the bottom of the mixing tank 2. From the above discussions, applicant respectfully submits that those skilled in the art would understand that the present specification reasonably conveys to one of ordinary

skill in the art a step of "separating the mixture solution in the mixing tank and forming a water rich portion of the mixture solution at a bottom portion of a mixing tank," as required in step (e) of claim 4. Therefore, applicant respectfully submits that the present specification disclosure provides a written description of the invention set forth in step (e) of claim 4 within the meaning of 35 U.S.C. §112, first paragraph.

Claim 4, step (f)

Written support for the limitation in claim 4, step (f) of "emulsifying the mixture solution from the bottom portion of the mixing tank at first through the processing means and returning the mixture solution to the mixing tank, thereby forming the emulsion of water and fuel" can be found in the present specification disclosure at page 16, lines 16-24; FIGS. 1, 2, and 4; and elsewhere. For example, the discussion at page 16, lines 16-24 of the present specification disclosure corresponds to FIGS. 1 and 2 of the present application and describes what occurs between timelines D and E as shown in these figures. Namely, after the separating step that occurs between C and D in FIG. 1, in step "(f)" that is discussed at page 16, lines 16-24 and shown in FIG. 4 of the present specification, the mixture in mixing tank 2 is pumped by pump 11 into the fine processing means 12. In particular, FIG. 4 shows that the mixture from the mixing tank 2 is pumped from a bottom of the mixing tank 2. In this connection, it is respectfully noted that the drawings alone may be sufficient to provide the "written description of the invention" required by §112, first paragraph. *Vas-Cath Inc. v. Mahurkar*, 19 USPQ2d 1111 (Fed. Cir. 1991). See also *KangaROOS U.S.A., Inc. v. Caldor, Inc.*, 228 USPQ 32 (Fed. Cir. 1985) and *In re Berkman*, 209 USPQ 45 (CCPA 1981). For at least the foregoing reasons, applicant respectfully submits that the present specification disclosure provides a written description for

emulsifying the mixture solution from the bottom portion of the mixing tank at first through the processing means and returning the mixture solution to the mixing tank, thereby forming the emulsion of water and fuel, as defined in step (f) of claim 4 within the meaning of 35 U.S.C. § 112, first paragraph.

Claim 7, step (a)

Applicant's claim 7 is directed to an aspect of the invention where an initial batch of an emulsion of water and fuel was prepared according, for example, to the method proposed in claim 4, and the resulting emulsion of water and fuel was sent to the storage tank 4, as shown in FIG. 4 of the present application. In this situation, an amount of a mixture of water and fuel remains in the mixing tank 2. In claim 7, step (a) the mixture of water and fuel that remains in the mixing tank 2 is referred to as the "first volume." While the words "first volume" do not explicitly appear in applicant's specification, these words and claim 7, step (a) are reasonably conveyed to one of ordinary skill in the art based on the discussion on page 18, lines 1-12; page 11, line 20 - page 12, line 8; and elsewhere in the present specification disclosure. At this point in time, fuel and additive are added to the water emulsion of water and fuel of the first volume, as described on page 18, lines 13-24, FIG. 3 between A and B, and elsewhere in the present specification disclosure. At least for these reasons, applicant respectfully submits that the present specification disclosure reasonably conveys to one of ordinary skill in the art a step of "charging a fuel and an additive into a mixing tank containing the emulsion of water and fuel having a first volume," as required in step (a) of claim 7 within the meaning of 35 U.S.C. §112, first paragraph.

Claim 7, step (b)

After the charging of the fuel and an additive into the mixing tank containing the emulsion of water and fuel having a first volume; as described on page 18, lines 13-24 of the present specification, an agitation step is performed on the resulting mixture in the mixing tank 2. This agitating step is described on page 12, lines 8-10; page 18, lines 1-24; FIG. 3 between A and B; and elsewhere in the present specification disclosure. Accordingly, applicant respectfully submits that the present specification disclosure provides a written description of the step of "agitating the water emulsion of water and fuel having a first volume together with the fuel and additive and forming a first mixture solution," as defined in step (b) of claim 7 within the meaning of 35 U.S.C. §112, first paragraph.

Claim 7, step (d)

After step (b) in claim 7, as discussed above, step 7(c) defines charging water into the mixing tank and forming a *second* mixture solution. See, for example, FIG. 3 between B and C. Thereafter, the second mixture is emulsified by being pumped from the mixing tank through a processing means, which reduces clusters of liquid molecules in the mixture solution into smaller clusters, and returns the resulting emulsion of water and fuel having a second volume larger than the first volume to the mixing tank. See, for example, page 6, lines 13-15 and 18-22; page 12, lines 12-16, step (d); Page 18, line 25 - page 19, line 1; and FIG. 3 between B and C. Accordingly, applicant respectfully submits that the present specification disclosure provides a written description of the step of "emulsifying the second mixture solution by pumping the second mixture solution from the mixing tank through a processing means, which reduces clusters of liquid molecules in the mixture solution into smaller clusters, and returning the

resulting emulsion of water and fuel having a second volume larger than the first volume to the mixing tank" as defined in step (d) of claim 7 within the meaning of 35 U.S.C. §112, first paragraph.

Claim 8, step (d)

As explained above, reducing huge clusters of liquid molecules into smaller clusters of liquid molecules is described in the present specification disclosure at page 6, lines 13-15 and lines 18-22, and elsewhere. Such emulsifying and returning the emulsified solution to the mixing tank, thereby forming a second mixture solution of fuel additive in water are described in the present specification disclosure at page 12, lines 12-16, step (d); page 15, line 20 - page 16, line 9, step (e); FIG. 2 between B and C; and elsewhere. Accordingly, applicant respectfully submits that the present specification disclosure provides a written description of the step of "reducing clusters of liquid molecules in the first mixture solution into smaller clusters by pumping the firstly mixed solution through a processing means and returning to the mixing tank, thereby forming a second mixture solution of the fuel, additive and water," as required in step (d) of claim 8, within the meaning of the first paragraph of 35 U.S.C. §112.

Claim 8, step (e)

As explained in connection with step (e) of claim 4 above, the liquid mixture within the mixing tank 2 contains molecule clusters having more oil than water (i.e., oil-rich state) and molecule clusters having more water than oil (i.e., water-rich state). When allowed to settle in the mixing tank 2, the molecules clusters having more water than oil (i.e., water-rich state) are heavier or have a larger specific gravity than the molecule clusters having more oil than water (i.e., oil-rich state), and therefore the molecule clusters having more water than oil settle to the

bottom of the mixing tank 2. See, for example, the discussions and showing at page 16, lines 10-15, "(e)"; FIG. 2 between C and D; and elsewhere in the present specification disclosure. At least from the above, applicant respectfully submits that those skilled in the art would understand the present application reasonably conveys to one of ordinary skill in the art a step of "separating the second mixture solution in the mixing tank and forming a water rich portion in the second mixture solution at a bottom portion of a mixing tank," as required in step (e) of claim 8 within the meaning of 35 U.S.C. §112, first paragraph.

Claim 8, step (f)

After step (e) of claim 8 (the separating step), the separated (second mixture) solution is emulsified. As shown, for example in FIG. 4, the solution from the bottom of the mixing tank 2 is firstly pumped through the processing means, thereby forming the emulsion of water and fuel. 2. See also, page 16, lines 16-24, step (f); FIG. 2 between D and E; and elsewhere in the present the specification disclosure. Accordingly, applicant respectfully submits that the present specification disclosure provides a written description of the step of "emulsifying the separated second mixture solution from the bottom portion of the mixing tank at first through the processing means, thereby forming the emulsion of water and fuel," as defined in step (f) of claim 8 within the meaning of 35 U.S.C. §112, first paragraph.

Claim 10

The present specification disclosure describes at page 11, line 12 - page 11, line 19; page 17, lines 17-19; FIG. 2 between B and C; and elsewhere that the agitating step (c) and fine processing step (d) are performed in parallel. See, in particular, FIG. 2 between B and C and the discussion on page 17, lines 17-19. Accordingly, applicant respectfully submits that the present

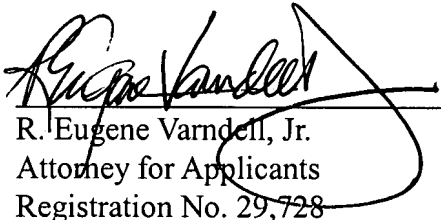
specification disclosure provides a written description of step (c) and step (d) of claim 8 being performed in parallel as required in present claim 10 within the meaning of 35 U.S.C. §112, first paragraph.

At least for the foregoing reasons, applicant respectfully submits that the present specification disclosure provides a written description of the invention defined in claims 4-10 within the meaning of the first paragraph of 35 U.S.C. §112. Therefore, applicant respectfully requests that the examiner reconsider and withdraw this rejection and formally allow claims 4-10.

While it is believed that all the claims in this application are in condition for allowance, should the examiner have any comments or questions, it is respectfully requested that the undersigned be telephoned at the below listed number to resolve any outstanding issues.

In the event this paper is not timely filed, applicant hereby petitions for an appropriate extension of time. The fee therefor, as well as any other fees that become due, may be charged to our deposit account No. 50-1147.

Respectfully submitted,
POSZ LAW GROUP, PLC


R. Eugene Varndell, Jr.
Attorney for Applicants
Registration No. 29,728

Atty. Case No. VX032544
12040 South Lakes Drive
Suite 101
Reston, Virginia 20191
(703) 707-9110

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